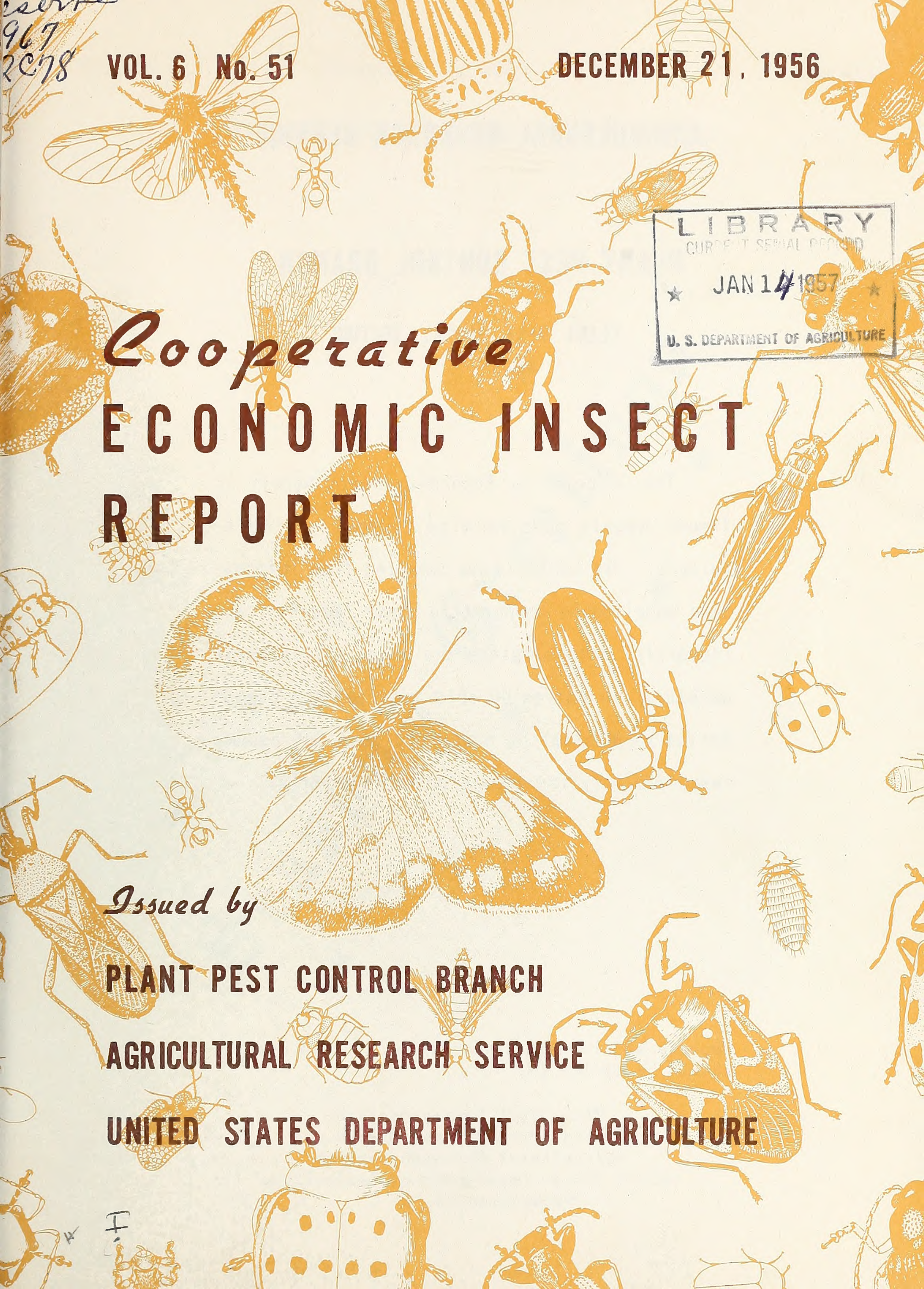
Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

eserve
967
2C78



VOL. 6 No. 51 DECEMBER 21, 1956

LIBRARY
CURRENT SERIAL RECORD
★ JAN 14 1957 ★
U. S. DEPARTMENT OF AGRICULTURE

Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL BRANCH
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

k F

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL BRANCH

PLANT PEST SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Plant Pest Survey Section
Plant Pest Control Branch
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

Volume 6 December 21, 1956 Number 51

COOPERATIVE ECONOMIC INSECT REPORT

Season's Greetings

Highlights of Insect Conditions

SOYBEAN CYST NEMATODE found in Missouri. Additional report from Lake County, Tennessee. (p. 1125).

BOLL WEEVIL hibernation counts in Louisiana lower than in 1955. (p. 1127).

SUMMARY OF INSECT CONDITIONS - 1956 - Texas (p. 1132), Maryland (p. 1134).

Distribution of ORIENTAL FRUIT MOTH. (p. 1131).

Reports in this issue are for the week ending December 14 unless otherwise designated.

****

WEATHER BUREAU'S 30-DAY OUTLOOK

Mid-December to Mid-January 1956 - 1957

The Weather Bureau's 30-day outlook for mid-December to mid-January calls for temperatures to average below seasonal normals over northern portions of the nation lying between the Appalachians and the Continental Divide. Above normal temperatures are expected to prevail along the Gulf Coast, in the Southeast, and also over the far Southwest. In areas not specified near normal averages with large fluctuations are in prospect.

Precipitation is predicted to equal or exceed normal over most of the nation except for subnormal amounts in the Northern Plains and the Southwest. Much of the precipitation in Central and Northern areas will be in the form of snow.

Weather forecast given here is based on the official 30-day "Resume and Outlook", published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D.C. Price $4.80 a year, $2.40 a half year.

Weather continued on p. 1130.

CEREAL AND FORAGE INSECTS

BROWN WHEAT MITE (Petrobia latens) - OKLAHOMA - Mature mites common in fall-planted wheat near Hydro and Hinton. Large numbers of red winter eggs found under clods in several fields. No white diapause eggs seen. (Henderson). TEXAS - Light infestations in winter grain in north central area but no damage. (Chada).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - General light infestations occurred over most of the north central area with one field of oats in Navarro County with a heavy infestation. (Chada, Burleson).

GREENBUG (Toxoptera graminum) - TEXAS - No infestations observed in north central area. (Chada).

SPOTTED ALFALFA APHID - TEXAS - Infestations on seedling alfalfa increasing and heavy infestation occurring on older plants in Burleson and Brazos Counties. (Randolph). Medium infestations on alfalfa in Kaufman and Rockwall Counties. (Hawkins).

WHEAT CURL MITE (Aceria tulipae) - WASHINGTON - Infesting Merion bluegrass at Pomeroy. First collected Nov. 1 and still present in moderate numbers. (Harwood).

Soybean Cyst Nematode Found in Missouri

The following statement, dated December 13, 1956, has been received from J.R. Anderson, State Entomologist, Missouri State Department of Agriculture, Jefferson City.

"The soybean cyst nematode, Heterodera glycines Ichinohe, has been positively identified by a Federal Specialist from soil samples taken in the vicinity of Hayti, Missouri, Pemiscot County. This single positive find was the result of an immediate survey by State and Federal Entomologists upon receipt of the notification of the infestation in Tennessee. Extensive soil surveys will be conducted with all possible speed to ascertain the extent of the infestation and proper regulatory action as advised by Federal Officials will be taken. All regulatory officials will be kept informed as to current information and action.

"Pemiscot and neighboring counties are largely delta farming areas and devoted mainly to cotton and soybean production. There is very little movement of nursery stock, root crops, or other plant movement from this area during this part of the year."

Soybean Cyst Nematode Situation in Lake County, Tennessee

Soybean cyst nematode has been confirmed from 12 locations representing about 1,600 acres, all in Lake County. Samples from 5 additional Lake County locations have been tentatively identified as Heterodera glycines. If these latter samples are confirmed, the known-infested acreage will be increased to approximately 2,200. (Bruer, December 14).

FRUIT INSECTS

MEXICAN FRUIT FLY (Anastrepha ludens) - TEXAS - A gravid female collected in a grove in eastern part of Cameron County, Nov. 23 and one male collected in central part of Hidalgo County a few days later. Unusually early for gravid females in this area. (PPC, So. Reg., Nov. 1-30).

CALIFORNIA PRIONUS (Prionus californicus) - OREGON - Larvae presumed to be this species damaging cherry trees at The Dalles, Dec. 5. (Capizzi).

OLIVE SCALE (Parlatoria oleae) - CALIFORNIA - Reported from Orland, Glenn County. While not a new county record, the find represent a new extension to the north and comes closer to the large commercial olive district near Corning in Tehama County where infestation has never been found. (Cal. Coop. Rept., Dec. 7).

A FILBERT LEAF ROLLER (Archips rosana) - OREGON - Especially heavy egg depositions in Eugene area. (Capizzi).

A WAX SCALE (Ceroplastes sp.) - NORTH CAROLINA - Local general infestation on blueberry in Sampson County. (Scott, Farrier).

BURROWING NEMATODE (Radopholus similis) - FLORIDA - During November, 15,195 root samples collected from 169 groves, 306 nurseries, 7 ornamentals nurseries and three dooryard and miscellaneous plantings in 13 counties. Of 16,682 samples examined, 578 were found infested. New infestations totaled 45 properties. Infestations are located in Hardee, Highlands, Orange, Palm Beach, Polk and Seminole Counties. (PPC, So. Reg., Nov. 1-30).

A PHALAENID (Pseudoplusia includens) - CALIFORNIA - Three adults reared by C. A. Fleschner from larvae collected on avocado leaves in San Diego County. An unusual host record. (Cal. Coop Rept, Dec. 7).

TRUCK CROP INSECTS

BEET LEAFHOPPER (Circulifer tenellus) - UTAH - Monogerm male-sterile sugar beets, being grown for seed at St. George, showed curly top incidence ranging from 18 to 54 beets per 100 feet of row, with an average of 30. (Dorst).

Sweetpotato Weevil Situation, October-November: During the two-month period 716 new infestations were found in infested States including three new counties. This compares with 1200 new infestations and nine new counties found during same period in 1955, a decrease of 40 percent. Reduction occurred in all states except Louisiana and South Carolina where slight increases occurred. (PPC, So. Reg., Nov. 1-30).

GREEN PEACH APHID (Myzus persicae) - WASHINGTON - Recovered in flight at Union Gap. (Landis).

APHIDS - TEXAS - Attacking spinach in one large spinach farm in Dimmit County. Medium local infestation becoming widespread. (Richardson).

MELON FLY (Dacus cucurbitae) - CALIFORNIA - No flies captured during the week nor have any been taken since the capture of a single fly in July. (Cal. Coop. Rept.).

A WHITEFLY Aleyrodes spiraeoides) - WASHINGTON - Winged forms quite abundant at Union Gap. (Landis).

COTTON INSECTS

Boll Weevil Hibernation Survey, Louisiana, Fall 1956: Collections made from Nov. 19 to Dec. 6. Ground trash collected near Tallulah, Madison Parish, showed an average of 2622 live weevils per acre, slightly under the average of 2914 for the location in past 20 years, and about one-fifth as many as found in fall, 1955, the year of highest count. Number per point (3 samples) ranged from 0 to 8070. In northeastern area, including East Carroll, Madison and Tensas Parishes, an average of 2596 live weevils per acre were found and none in Tensas samples. This area showed largest number per acre of the four areas sampled. In north central area including Richland, Morehouse and Ouachita Parishes, weevils found in all three parishes and averaged 1255 per acre. Northwestern area including Natchitoches, Bossier and Red River Parishes, averaged 628 live weevils per acre, all in Natchitoches. South central area, including St. Landry, Rapides and Avoyelles Parishes, averaged 528 live weevils per acre with weevils found in all three parishes. For the State, weevils were found in nine of the 12 parishes where collections made and at average rate of 1344 weevils per acre. This was only about one-seventh as many as were found in fall of 1955. (Smith, Pfrimmer).

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - Six larvae found on lint cleaners at Elk City. (Hatfield). CALIFORNIA - Gin trash inspection continued in Imperial County, completed in Riverside County where 1479 bushels of gin trash inspected. Boll inspection continued in Imperial County and was completed in Fresno County where 39,400 bolls examined. No pink bollworm found in any inspection. (Cal. Coop. Rept., Dec. 7).

A LEAF ROLLER (Platynota stultana) - CALIFORNIA - Considerable number of larvae taken in boll examinations for pink bollworm. (Cal. Coop. Rept., Dec. 7).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

PINE TORTOISE SCALE (Toumeyella numismaticum) - WEST VIRGINIA - Heavy infestation in jack pine in young trees in eastern panhandle. (Dorsey, Hansen, Gillespie).

COTTONY-CUSHION SCALE (Icerya purchasi) - NORTH CAROLINA -

Heavy local infestation on camellia in Edgecombe County. (Wray).

SOFT SCALE (Coccus hesperidum) - FLORIDA - All stages averaging many per leaf of oleander at Macclenny, Baker County, Dec. 7. (Holder). Infesting lignumvitae at Miami, Dade County, Oct. 19. (Dowling).

AZALEA BARK SCALE (Eriococcus azaleae) - MISSISSIPPI - Infested azalea twigs received from Lincoln County. (Hutchins).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - FLORIDA - All stages averaging 25 per leaf of croton of 600 inspected at Tampa, Hillsborough County, Dec. 3. (Hale).

SPIDER MITES - OKLAHOMA - Numerous on junipers in Jackson County. (Hudson).

INSECTS AFFECTING MAN AND ANIMALS

BROWN DOG TICK (Rhipicephalus sanguineus) - OKLAHOMA - Very light infestation on 25 dogs inspected at Lawton. (Schomberg).

CATTLE GRUBS - OKLAHOMA - A herd of 26 past-yearling bulls at Fort Reno averaged 11.7 grubs each. At Coalgate, 76 calves averaged 25.3 grubs each. (Schomberg).

CATTLE LICE - UTAH - Unsprayed cattle in Kane County heavily infested. (Rose, Knowlton).

SALT-MARSH MOSQUITO (Aedes sollicitans) - NORTH CAROLINA - Adults emerging in numbers in Dare County during warm weather of Dec. 3-7. (Cromroy).

NORTHERN FOWL MITE (Bdellonyssus sylviarum) - MISSISSIPPI - Specimens from chickens received from Pearl River County. (Hutchins).

LITTLE HOUSE FLY (Fannia canicularis) - WASHINGTON - Larvae recovered from infant's stool and urine at Spokane. (James).

STORED PRODUCTS INSECTS

KHAPRA BEETLE (Trogoderma granarium) - WEST VIRGINIA - Survey of State about one-half completed. No khapra beetle found. (Dorsey, Hansen, Gillespie).

MISCELLANEOUS INSECTS

SMALLER YELLOW ANT (Lasius claviger) - DELAWARE - Annoying in several homes at Wilmington and Newark, Dec. 5-8. (MacCreary).

CARPET BEETLES - OREGON - Inquiries about control continue numerous. Infestations evidently much heavier than usual. (Capizzi)

A DERMESTID (*Trogoderma versicolor*) - NORTH CAROLINA - Specimen taken in home in Wake County. (Smith, Farrier).

LIGHT TRAP COLLECTIONS

	Pseud. unipu.	Agrotis ypsil.	Prod. orn.	Perid. marg.	Fel. sub.	Hel. zea
TEXAS						
College Station 12/10-14*	14	2	5		3	2
NORTH CAROLINA(County)						
Duplin 12/1-7	1	1			2	
GEORGIA(County)						
Spalding 12/7-13	11	3	2	3	14	1
FLORIDA						
Belle Glade 12/4-5	10	15	1		7	1
Gainesville 12/6	1	3				

* Laphygma frugiperda, 6.

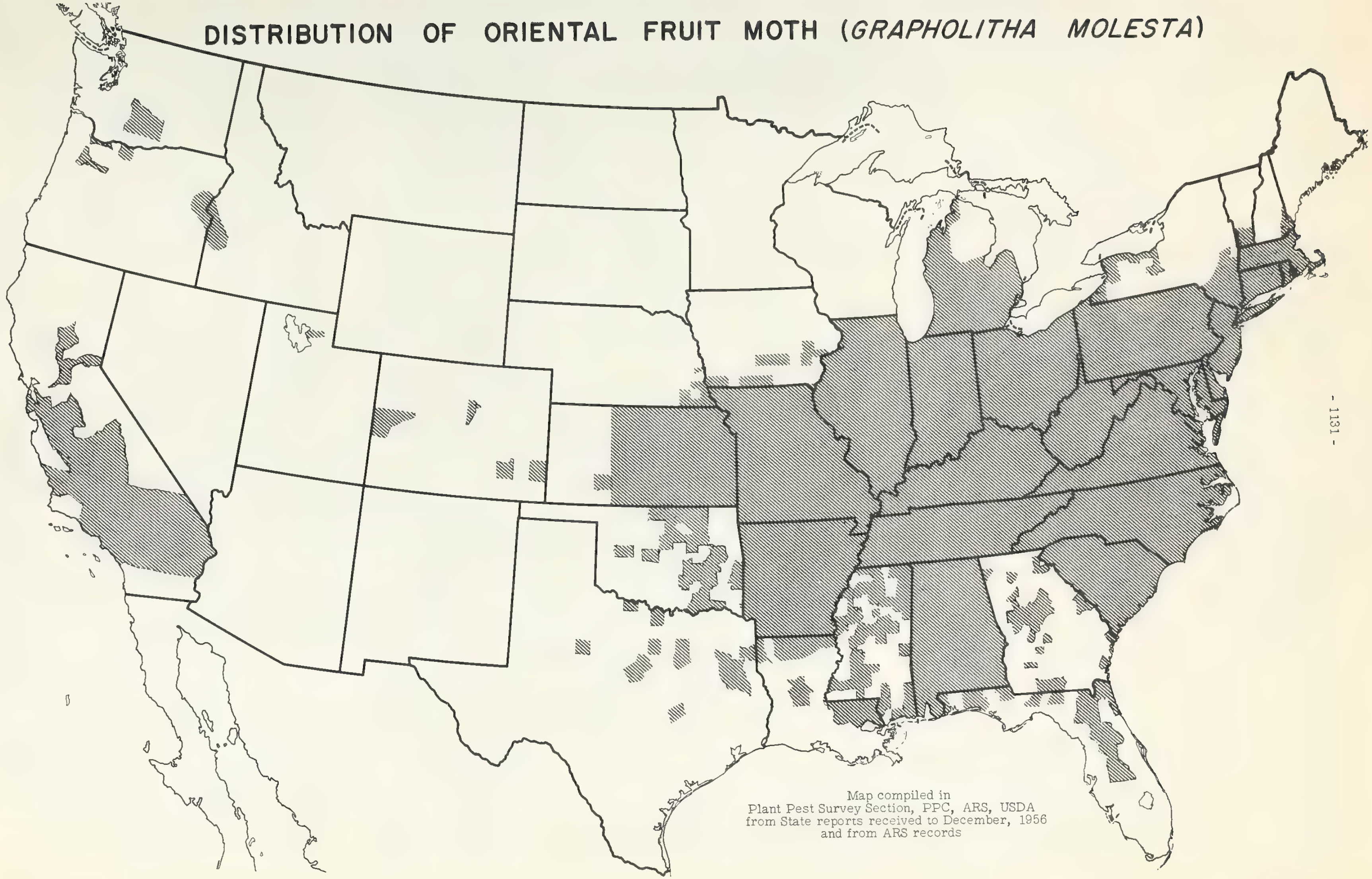
WEATHER OF THE WEEK ENDING DECEMBER 7, 1956

Excessive rains and warm weather in the Northwest, unseasonably cold outbreaks in the central and northern Great Plains, a glaze and snowstorm in the Northeast, dry sunny weather in the Southwest, heavy rains extending from Louisiana into the southern Appalachians, unseasonably warm temperatures in the South Atlantic States, and extensive fog over much of the East and Southeast for several days were the highlights of a varied weather pattern. The northeastern storm of snow, sleet, and freezing rain interrupted communications extensively and resulted in traffic accidents, totaling some 19 deaths, along its course. Beginning in New Jersey on Thursday and extending into southern Maine and New Hampshire by Friday its effects were felt through Sunday. Snow depths ranged to 1 foot in the more northern areas. Heavy snows were experienced earlier in the period in the northern Great Lakes region. Storm centers entered the Northwest early and late in the period, and weekly precipitation totals were moderate to heavy west of the Divide southward into northern California, Nevada, and Utah. Warm temperatures in addition to the rains melted some snow pack in mountain areas, resulting in high river stages and some minor flooding with no extensive damage. Some flooding was also reported in Kentucky and central Tennessee. Several stations in the latter State reported weekly totals of over 8 inches.

Temperatures for the week averaged below normal in the southern Rocky Mountain region as they did between one line extending from Brownsville, Texas to Sault Ste. Marie, Michigan, and another extending from Del Rio, Texas to Huron, South Dakota, thence northwestward to Cutbank, Montana. Elsewhere they were above normal, with greatest departures being observed in western Oregon and North Carolina where they averaged as much as +12° and +15° respectively. At Wilmington, North Carolina, the daily record maxima were exceeded on 5 days while an 85 year extreme for the month was equaled on Thursday when the 80° mark was reached. Cold air, penetrating the north-central regions, dropped minima to subzero values as far south as Kansas and Iowa. A temperature of -31° was reported at Hibbing, Minnesota, and one of -24° at Danbury, Wisconsin during the period.

The snow cover at lower elevations now covers the area north of a line extending from central Montana to southern Iowa and northeastward to northern Michigan; also the northeastern area as far south as southwestern New York. Greatest depths exist in the northwestern Great Lakes region. Warming eliminated the snow cover in the winter wheat area of Washington while at 4,000 feet 20-30 foot depths are still reported in the southern Cascades and 40 to 60 foot depths in the northern Cascades of that State. Other depths at higher elevations include 75 inches at Paradise Ranger Station, Washington, 26 inches at Steamboat Springs, Colorado, and 29 inches at West Yellowstone, Montana. (Summary Supplied by U.S. Weather Bureau).

DISTRIBUTION OF ORIENTAL FRUIT MOTH (*GRAPHOLITHA MOLESTA*)



Map compiled in
Plant Pest Survey Section, PPC, ARS, USDA
from State reports received to December, 1956
and from ARS records

TEXAS

Reported by H. A. Turney *

(This report is for the period November 1, 1955 to November 1, 1956.)

Cereal and Forage Insects: Infestations of WINTER GRAIN MITE (*Penthaleus major*) was generally light with a few heavy isolated spots. Light infestations of BROWN WHEAT MITE (*Petrobia latens*) occurred in the north central part of the State. GREENBUG (*Toxoptera graminum*) infestations were light with only a few isolated fields having heavy infestations. The aphid was collected from volunteer wheat in Deaf Smith, Castro, Moore and Swisher Counties in a survey conducted September 13-26, 1956. This is the first record of its occurrence at this time of year. CORN EARWORM (*Heliothis zea*) caused some damage to corn, grain sorghums, peanuts and forage crops. FALL ARMYWORM (*Laphygma frugiperda*) caused very little damage. LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) caused medium to heavy damage to beans, peanuts and grain sorghums in Waller, Mason and Erath Counties and in the Fort Worth-Dallas area. GRASSHOPPERS (many species) occurred over much of Texas. There were 4,883,000 acres where the infestation ranged from threatening to very severe. An area covering 282,565 acres of rangeland was sprayed this year. SPOTTED ALFALFA APHID infestations were 2 to 3 times worse than in 1955. Drought conditions along with this insect have drastically reduced the alfalfa acreage in this State. Spotted local infestations of cutworms, armyworms, cabbage loopers, alfalfa loopers, webworms, alfalfa caterpillar, false wireworms, sod webworms, white grubs, range termites, red-necked peanutworm, vetch bruchid, clover leaf weevil, blister beetles, rice water weevil, pea aphid, aphids, corn leaf aphid, chinch bugs, stink bugs, lygus bugs, three-cornered alfalfa hooper, thrips, leaf miners and seed-corn maggot were reported in damaging numbers. SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) was light in corn in the northeastern part of Texas and heavy in irrigated corn in the panhandle area. Considerable damage occurred on corn and rice in the Gulf Coast area from the SUGARCANE BORER (*Diatraea saccharalis*).

Fruit and Nut Insects: SAN JOSE SCALE (*Aspidiotus perniciosus*) caused very little damage. PLUM CURCULIO (*Conotrachelus nenuphar*) and CATFACING INSECTS were heavy in the northeastern part of the State. PEACH TREE BORER (*Sanninoidea exitiosa*) and LESSER PEACH TREE BORER (*Synanthedon pictipes*) were light to medium in northeast Texas. PEACH TWIG BORER (*Anarsia lineatella*) caused very little damage. PECAN NUT CASEBEARER (*Acrobasis caryae*) was heavy over most of the pecan-producing area of the State. HICKORY SHUCKWORM (*Laspeyresia caryana*) was present in a large number of orchards. DRIED-FRUIT BEETLE (*Carpophilus hemipterus*) populations were heavy in central Texas and along the Gulf Coast.

---

* George T. Davis, Jr., worked as survey entomologist from November 1, 1955, to April 1, 1956.

Truck Crop Insects: CORN EARWORM (Heliothis zea) caused damage throughout the year on corn, tomatoes, lettuce and other vegetable crops. CABBAGE LOOPER (Trichoplusia ni) caused considerable damage to lettuce, cabbage, cauliflower and turnips in the vegetable-growing areas. SERPENTINE LEAF MINERS (Liriomyza sp.) continued to do some damage again this year. BEET LEAFHOPPER (Circulifer tenellus) was very abundant on wild hosts. Considerable damage to sugar beets and tomatoes was observed in the panhandle and Crystal City area due to curly top disease, which is transmitted by this insect. ONION THRIPS (Thrips tabaci) occurred in moderate infestations on onions in the onion-growing section. Spotted local infestations of the following occurred - aphids, a tropical mite (Tetranychus marianae), pepper weevil, cowpea curculio, grasshoppers, fall armyworm, potato psyllid, tomato pinworm, blister beetles, squash bugs, leafhoppers, beet armyworm, diamondback moth, flea beetles, false chinch bugs, cutworms, stink bugs, harlequin bug, spider mites, thrips, false wireworm, melonworm, red lettuce aphid, darkling beetles and sweetpotato weevil.

Cotton Insects: Cotton insect populations were generally light because of the severe drought over most of the State. However, in irrigated fields the insect problems were about as severe as they were last year. CUTWORMS, FALSE WIREWORMS and GARDEN WEBWORM (Loxostege similalis) caused some damage to young cotton in isolated fields. COTTON APHID (Aphis gossypii) infestations appeared early in several areas but did not develop to a major problem, except in a few isolated fields. Damaging THRIPS (Frankliniella sp.) infestations occurred in many areas and heavy infestations occurred in the north and south plains areas. COTTON FLEAHOPPERS (Psallus seriatus) were light in all areas except the north and south plains and a few heavy spotted infestations in central Texas. There were several fields in these areas that were treated. DIFFERENTIAL GRASSHOPPER (Melanoplus differentialis) damaged cotton around field borders. However, most of the damage occurred in isolated fields and no general outbreak on cotton was reported. A very light general infestation of a LFAF MINER (Liriomyza sp.) occurred but very little damage was noticed. CABBAGE LOOPER (Trichoplusia ni) caused a great deal of ragging of leaves in central, east, northeast, north central, west and north and south plains areas, and especially in the irrigated cotton of these areas. Some populations were reduced by a virus disease which appeared in late July and August. BROWN COTTON LEAFWORM (Acontia dacia) caused a considerable amount of ragging of cotton leaves in the irrigated fields of the south central, central and north central areas. BOLL WEEVIL (Anthonomus grandis) infestations were light over most of the State although in some irrigated fields, the population reached a high level. In one field in Robertson County, this insect was found to be resistant to chlorinated hydrocarbons. BOLLWORM (Heliothis zea) infestations occurred in some fields in all of the cotton-growing areas. The heaviest infestations were in irrigated fields. COTTON LEAFWORM (Alabama argillacea) did not cause any economic damage this year. Light to medium infestations of SPIDER MITES occurred through the growing season in spots of several isolated fields. PINK BOLLWORM (Pectinophora gossypiella) populations were high in irrigated cotton along the Brazos River and in the western area around El Paso. The rest of the State, where pink bollworms occurred, had light to medium infestations. Most of the damage occurred on late-fruiting cotton. SALT-MARSH CATERPILLAR (Estigmene acrea) caused little or no economic damage.

Stored Products Insects: As the farm storage of grain increases, stored grain insects become more of a problem. The stored grain insects in the order of importance are rice weevil, a rice moth (Corcyra cephalonica) lesser grain borer, Indian-meal moth and bran beetles (including flat grain beetles, confused flour beetles, saw-toothed grain beetles and a fungus beetle (Typhaea stercorea)). VETCH BRUCHID (Bruchus brachialis) continued to do a lot of damage in the north central part of the State.

Forest, Ornamental and Shade Tree Insects: TURPENTINE BEETLES (Dendroctonus sp.), IPS BEETLES and ENGRAVER BEETLES continued to kill pine trees in the eastern part of the State in Angelina, Houston, Jasper, Newton, Trinity, San Augustine, Anderson, Montgomery, Nacogdoches, Cherokee and Tyler Counties. RED-HEADED PINE SAWFLY (Neodiprion lecontei) infestations were light to medium. BAGWORMS (Thyridopteryx ephemeraeformis) were heavy in the north central counties.

Insects Affecting Man and Animals: CATTLE GRUBS (Hypoderma sp.) continued to cause losses to cattle both in weight and reduction in sale price. SCREW-WORM (Callitroga hominivorax) problem was worse than in the past few years. Normal infestations of horn flies, cattle lice, fleeceworms, ear ticks, mange mites, tabanids, and ticks occurred on livestock. BROWN DOG TICK (Rhipicephalus sanguineus) continued heavy on dogs in several areas of the State. They were very difficult to control with chlorinated hydrocarbons. HOUSE FLY (Musca domestica) continued a problem in livestock barns and pens. Roaches, silverfish, termites, clothes moths and fleas were the major pests in and around homes. A TERMITE (Coptotermes crassus) was found infesting a dry dock in Harris County for the first time.

SUMMARY OF INSECT CONDITIONS - 1956

MARYLAND

Reported by W. C. Harding, Jr.

More Important Pests in 1956: EUROPEAN CORN BORER (Pyrausta nubilalis) damage to canning corn was heavier than normal particularly in Frederick and Carroll Counties late in the season. Field corn infestations were also heavier than normal. In the spring, heavy local outbreaks occurred in wheat in Talbot, Queen Anne and Dorchester Counties and in potatoes in Worcester and Somerset Counties. The 1956 fall population survey showed the State average to be 78 borers per 100 plants compared with 140 in 1955. CORN EARWORM (Heliothis zea) infestations in early and late sweet corn on the Eastern Shore were down considerably but about normal in the central counties. Damage to the late lima and snap bean crop on the Eastern Shore was below normal. ALFALFA WEEVIL (Hypera postica) activity was held back due to cool, wet weather in the spring. Moderate to heavy infestations were general about the middle of May. Infestations in Washington County reached economic status generally for the first year. The weevil is now of economic importance in all counties except Allegany and Garrett. Loss of alfalfa hay to the weevil is estimated at $500,000 which is slightly less than in 1955. This decrease in the amount of hay lost is attributed to the late start of the weevil and increases in the number of farmers spraying for this pest. PEA APHID (Macrosiphum pisi) populations on alfalfa were about as heavy as in 1955 and above normal being heaviest in central sections. Alfalfa sprays also included materials to control aphids. On peas, infestations were above normal with 90 percent of the commercial acreages treated. This year was one of the worst years for HORNWORMS (Protoparce spp.). Damage by the first brood in June was heavy in all five tobacco-growing counties. Untreated fields in late June were from 75-90 percent damaged. Spraying against both broods was general. On tomatoes hornworms were light on Eastern Shore, but heavy in the central counties where special sprays were required. APHIDS were abnormally abundant on most crops. GREEN PEACH APHID (Myzus persicae) on tobacco and spinach and the CABBAGE APHID (Brevicoryne brassicae) on cole crops were especially destructive. FLEA BEETLE injury on tobacco was less than in 1955 when the pest was the most destructive on record. FLEA BEETLES were above normal on corn, potatoes, tomatoes and cole crops in all sections. On the Eastern Shore CUTWORM damage to corn, tomatoes, beans, and potatoes was from moderate to heavy. In the central sections CUTWORM injury was light. The predominating cutworm moths caught in the black light trap during the spring and summer at Fairland were the BLACK CUTWORM (Agrotis ypsilon) and the VARIEGATED CUTWORM (Peridroma margaritosa). The most abundant species caught in the fall was the DINGY CUTWORM (Feltia subgothica). MOSQUITOES - Mosquitoes in 1956 were a serious problem particularly on the Eastern Shore where the SALT-MARSH MOSQUITO (Aedes sollicitans) was abundant. The new mosquito control program is now underway and should afford relief.

Corn and Grain Insects: SAP BEETLES (Carpophilus spp.) were heavier than normal in all sections. FALL ARMYWORM (Laphygma frugiperda) populations on sweet and field corn were down considerably from 1954 and 1955. SOD WEBWORMS (Crambus spp.) caused concern early in the season in the central sections and the CORN ROOT APHID (Anuraphis maidi-radicis) caused light injury to field corn in Kent County. ARMYWORM (Pseudaletia unipuncta) local outbreaks occurred on small grains in Worcester and Wicomico Counties early June with some fields treated with insecticides.

Hay and Forage Crops: MEADOW SPITTLEBUG (Philaenus leucophthalmus) infestations were light to moderate on alfalfa, with some localized heavy infestations on red clover in central sections and on hay mixtures in western areas. LESSER CLOVER LEAF WEEVIL (Hypera *nigrirostris*) injury to red clover increased over 1955 in central area and on the upper Eastern Shore. POTATO LEAFHOPPER (*Empoasca fabae*) was from light to moderate on alfalfa but caused some severe injury to some fields in the central counties and on the Eastern Shore.

Soybeans: Principal pests of soybeans during the year that caused light to moderate damage were Japanese beetle (*Popillia japonica*), spider mites, bean leaf beetle (*Ceratoma trifurcata*), Mexican bean beetle (*Epilachna varivestis*), potato leafhopper (*Empoasca fabae*), green cloverworm (*Plathypena scabra*) and grasshoppers. BEAN LEAF BEETLE did the most damage to soybeans early in the season.

Fruit - Apple Insects: ROSY APPLE APHID (*Anuraphis roseus*) was heavier than in the past two years, although readily controlled in the petal-fall spray. ORCHARD MITE populations in general were low. One or two orchards early in the season had heavy infestations of EUROPEAN RED MITE (*Metatetranychus ulmi*) but these infestations were controlled by the use of acaricides. UNSPOTTED TENTIFORM LEAF MINER (*Callisto geminatella*) populations were heavy in all orchards where recommended control practices were not followed. RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) caused some damage in the early part of the season, but heavy spraying brought it under control. CODLING MOTH (*Carpocapsa pomonella*) damage was much less than in 1954 or 1955. Cool and rainy weather was unfavorable for maxium reproduction. APPLE MAGGOT (*Rhagoletis pomonella*) was reported in one orchard in Frederick County and one orchard in Washington County. *Peach Insects* PLUM CURCULIO (*Conotrachelus nenuphar*), ORIENTAL FRUIT MOTH (*Grapholitha molesta*) and PEACH TREE BORER (*Sanninoidea exitiosa*) caused little or no damage in commercially-sprayed orchards. CAT-FACING INSECTS caused more damage than usual.

Vegetables: ASPARAGUS BEETLES (*Crioceris asparagi* and *C. duodecimpunctata*) were abundant on commercial plantings in Kent and CecilCounties. Most commercial acreages of snap and lime beans required sprays for MEXICAN BEAN BEETLE (*Epilachna varivestis*) which was heavier than usual. SPIDER MITES were below normal except on home plantings on the lower Eastern Shore. BEAN LEAF BEETLE (*Cerotoma trifurcata*) and BEAN APHID (*Aphis fabae*) were about normal. CABBAGE LOOPER (*Trichoplusia ni*) very abundant particularly on broccoli on the Eastern Shore. SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) and STRIPED CUCUMBER BEETLE (*Acalymma vittata*) populations were about normal on cucurbits. There was moderate damage to cucumbers grown for pickles in Calvert County. COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) were somewhat below normal on tomatoes and potatoes. POTATO APHID (*Macrosiphum solanifolii*) was heavy on tomatoes on the lower Eastern Shore. VINEGAR GNATS were again abundant at tomato canneries in September. No reports were received of TOMATO RUSSETT MITE. POTATO LEAFHOPPER unusually damaging.

Tobacco Insects: In tobacco beds the VEGETABLE WEEVIL (*Listroderes* costirostris obliquus) did more damage than anytime since it was first found in 1952. Thirteen farms in St. Marys and Calvert Counties reported from light to heavy tobacco-bed damage from the pest. Others that caused injury to tobacco plants in the bed were cutworms, flea beetles and green June beetle (Cotinis nitida) larvae.

Forest, Shade Tree And Ornamental Insects: Aerial surveys by the Beltsville Forest Insect Laboratory showed PINE SAWFLIES, particularly (Neodiprion pratti), caused heavy defoliation of Virginia pine in the Patuxent River watershed. Some 2,000 acres were involved. Sawfly damage was also reported from southern Maryland and the Eastern Shore. FALL CANKERWORM (Alsophila pometaria) heavily defoliated about 600 acres of hardwoods on Sugarloaf Mountain in western Maryland in May. VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) localized outbreaks were observed on white, and southern red oaks in St. Marys County and over the entire Eastern Shore in July and August. NANTUCKET PINE MOTH (Rhyacionia frustrana) caused light to moderate damage to Virginia and watershed pine plantings in central Maryland and to natural stands of loblolly pines on the Eastern Shore. LOCUST LEAFMINER (Chalepus dorsalis) caused heavy injury to black locust during the summer over the entire State, particularly severe in central counties. APHIDS were abnormally abundant on Norway maple, tulip poplar and oaks. Among the more important pests that caused additional trouble on trees, ornamentals, and in the garden were Japanese beetle (Popillia japonica), bagworm (Thyridopteryx ephemeraeformis), euonymus scale (Unaspis euonymi), mimosa webworm (Homadaula albizziae), elm leaf beetle (Galerucella xanthomelaena), fall webworm (Hyphantria cunea), poplar tentmaker (Ichthyura inclusa), eastern tent caterpillar (Malacosoma americanum), boxwood leaf miner (Monarthropalpus buxi), aphids, lace bugs, spider mites, slugs and millipedes. In lawns and pastures grubs of JAPANESE BEETLE and Cyclocephala grubs were destructive in suburban areas in September.

Stored Products; ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) was heavy in stored grain in central areas. CADELLE (Tenebroides mauritanicus) was reported in stored grain from Charles, St. Marys and Washington Counties in August and September. Numerous reports were received of the POTATO TUBERWORM (Gnorimoschema operculella) in stored potatoes in southern Maryland. Other stored product pests that gave trouble were the saw-toothed grain beetle (Oryzaephilus surinamensis), mealworms , Indian- meal moth (Plodia interpunctella) and grain mites.

Man and Animal Insects: WASPS and YELLOW JACKETS caused concern to homeowners in different sections and YELLOW JACKETS were extremely annoying to workers in a fruit and spice processing plant in Baltimore in October. Cases of individuals being bitten by WHEEL BUG (Arilus cristatus) were reported from Kent County. CHIGGER (Eutrombicula alfreddugesi) seemed more abundant than usual. STINGING CATERPILLARS including the SADDLEBACK (Sibine stimulea) and PUSS CATERPILLAR (Megalopyge opercularis) gave trouble to humans in the early fall in different sections of the State. Other pests that caused concern were eye gnats, fleas and house fly (Musca domestica). COMMON CATTLE GRUB (Hypoderma lineatum) surveys in January and February on 12 farms in Frederick, Montgomery, Queen Annes, and Harford Counties showed 87 out of 163 young beef animals infested with grubs, with an average of four per animal. Dairy cattle showed 49 out of 214 infested with an average of 3 per animal. HOUSE FLY and BITING FLIES were above normal in all sections. Dogs and cats were bothered considerably by FLEAS in most sections.

Household Insects: Homeowners throughout the State were troubled with silverfish (Lepisma saccharina), ground beetles, ants, cockroaches, wasps, termites, carpet beetles, old-house borer (Hylotrupes bajulus), centipedes and the black widow spider (Latrodectus mactans). Asiatic oak weevil (Cyrtepistomus castaneus) and elm leaf beetle (Galerucella xanthomelaena) caused concern by entering homes. CLOVER MITE (Bryobia praetiosa) was abundant in the spring, entering homes particularly in the Baltimore area.